

from the report of the official in charge of the Weather Bureau office at Columbia, S. C., is suggestive of conditions in other districts as well as his own:

It is generally accepted that the September floods were more damaging than the August floods, especially as to highways and crops, the latter being practically ruined in extensive areas, while the highway commission has made increased allotments over the August sums for road repairs. On account of much lighter rainfall in the Piedmont sections, the principal damage occurred in the central basins and the lower reaches.

This report also states that on account of damaged culverts two railroad trains were wrecked in South Carolina and five persons killed, the damage to the culverts having been due to undermining and seepage from the rains and floods. These were the only deaths reported. The total monetary loss, however, is reported to have reached a total of \$4,004,050. Of this amount at least \$2,000,000 was in crops, about evenly divided between the two States.

[All dates in September except as otherwise specified]

River and station	Flood stage	Above flood stages—dates		Crest	
		From—	To—	Stage	Date
ATLANTIC DRAINAGE					
	<i>Feet</i>			<i>Feet</i>	
Connecticut: Bellows Falls, Vt.....	12	{ 18 30	19 (1)	12.2 12.3	19 30
James:					
Columbia, Va.....	18	7	7	24.0	7
Richmond, Va.....	10	7	7	11.8	7
Roanoke:					
Randolph, Va.....	21	{ 7 20	----- -----	24.8 25.1	8 21
Weldon, N. C.....	30	{ 7 20	10 25	36.6 42.0	9 23
Dan:					
Danville, Va.....	8	20	20	8.3	20
Clarksville, Va.....	12	21	22	13.0	22
Tar:					
Rocky Mount, N. C.....	9	{ 5 19	8 24	9.9 13.6	7 20
Tarboro, N. C.....	18	9	11	20.7	10
Greenville, N. C.....	14	{ 10 20	13 (1)	15.7 21.9	12 24-25
Fishing Creek: Enfield, N. C.....	15	19	22	16.7	20
Neuse:					
Neuse, N. C.....	15	{ 6 19	9 25	16.3 20.0	9 22
Smithfield, N. C.....	14	{ 4 18	11 26	21.5 28.0	7 21
Cape Fear:					
Fayetteville, N. C.....	35	{ 4 19	10 25	55.5 64.7	8 22
Elizabethtown, N. C.....	22	{ 4 19	13 28	35.7 41.8	9 23
Haw: Moncure, N. C.....	22	6	7	27.0	6
Waccamaw: Conway, S. C.....	7	19	22	30.3	20
Peedee:					
Cheraw, S. C.....	27	{ 5 19	9 23	37.7 42.0	7 20
Mars Bluff, S. C.....	17	5	(1)	29.6	23
Lynches: Effingham, S. C.....	14	{ 5 18	14 28	19.0 19.4	11 20 and 24
Black: Kingstree, S. C.....	12	{ 6 19	14 28	15.6 18.0	8 21
Santee:					
Rimini, S. C.....	12	(2)	(1)	30.4	Aug. 21
Ferguson, S. C.....	12	(2)	(1)	20.6	Aug. 22
Catawba: Catawba, S. C.....	12	{ 6 18	7 20	14.0 17.5	7 18
Wateree:					
Camden, S. C.....	24	{ 5 18	8 22	33.2 32.5	6 19
Malta, S. C.....	14	{ 8 21	8 22	14.0 14.5	8 22
Congaree: Columbia, S. C.....	15	{ 6 19	7 20	26.2 19.6	6 19
Broad: Blairs, S. C.....	15	{ 6 19	7 20	18.5 19.0	6 19
Saluda: Chappells, S. C.....	14	{ 6 19	6 19	16.4 14.4	6 19

¹ Continued at end of month.

² Continued from last month.

River and station	Flood stage	Above flood stages—dates		Crest			
		From—	To—	Stage	Date		
ATLANTIC DRAINAGE—continued							
Altamaha:	<i>Feet</i>			<i>Feet</i>			
Charlotte, Ga.....	15	{	(1) 7	1	26.2	Aug. 22	
Everett City, Ga.....	10			21	18.9	11	
Oconee: Milledgeville, Ga.....	22		(2) 5	30	15.0	Aug. 27-28	
Ocmulgee:				6	26.5	6	
Macon, Ga.....	18		6	6	18.1	6	
Abbeville, Ga.....	11		6	15	13.0	12	
MISSISSIPPI DRAINAGE							
French Broad: Asheville, N. C.....	4	{	3	3	5.0	3	
				6	8	5.0	6
Big Pigeon: Newport, Tenn.....	6			3	3	6.0	3
Hiwassee: Charleston, Tenn.....	22		6	6	6.5	6	
Wisconsin:			3	3	22.6	3	
Knowlton, Wis.....	12		15	17	16.9	16	
Portage, Wis.....	17		19	21	18.1	20	
Grand:							
Gallatin, Mo.....	20		12	16	28.2	15	
Chillicothe, Mo.....	18		12	18	27.8	16	
Brunswick, Mo.....	12		17	19	12.2	18	
Canadian: Logan, N. Mex.....	4				5.0	2	
WEST GULF DRAINAGE							
Rio Grande: San Benito, Tex.....	23		25	26	23.9	26	

² Continued from last month.

MEAN LAKE LEVELS DURING SEPTEMBER

By UNITED STATES LAKE SURVEY

[Detroit, Mich., October 5, 1928]

The following data are reported in the Notice to Mariners of the above date:

Data	Lakes ¹			
	Superior	Michigan and Huron	Erie	Ontario
Mean level during September, 1928:	<i>Feet</i>	<i>Feet</i>	<i>Feet</i>	<i>Feet</i>
Above mean sea level at New York.....	603.40	580.44	572.12	246.17
Above or below—				
Mean stage of August, 1928.....	+0.38	-0.06	-0.47	-0.47
Mean stage of September, 1927.....	+0.74	+1.26	+0.48	+0.90
Average stage for September, last 10 years.....	+1.17	+0.57	+0.16	+0.63
Highest recorded September stage.....	-0.64	-2.99	-1.82	-1.44
Lowest recorded September stage.....	+2.07	+2.22	+1.19	+2.17
Average departure (since 1860) of the September level from the August level.....	+0.05	-0.20	-0.26	-0.41

¹ Lake St. Claire's level: In September, 1928, 575.16 feet.

EFFECT OF WEATHER ON CROPS AND FARMING OPERATIONS, SEPTEMBER, 1928

By J. B. KINCER

General summary.—A continuation of heavy rain during the first decade over an area from New Jersey and Pennsylvania southward was very detrimental to farming operations and crops, with much work delayed and crops damaged. Elsewhere it was mostly favorable for outdoor work, but fall plowing was hindered by hard, dry soil in many interior districts and a general rain was needed over most of the interior valley States.

During the second decade a tropical hurricane which struck the Florida peninsula on the 16th-17th, brought torrential rains and high winds to most sections from Florida northeastward to Pennsylvania. The weather

was favorable for farm work in many other sections, especially in the Northeast and the Ohio Valley, and in parts of the upper Mississippi Valley rains were of benefit, although they caused some delay to threshing, plowing, and seeding. There was very little rain from the Rocky Mountains westward, but in the Pacific Northwest beneficial showers checked forest fires and improved soil moisture.

Toward the close of the month, conditions improved materially in the Southeast, where the hurricane of the previous decade had wrought much damage through washing soil, flooding lowlands, and delaying farm work. There was a widespread need of rain for fall pastures, and in the principal wheat areas, also, moisture was needed. The frosts, which occurred unusually early in some sections, caused no material harm, as most staple crops had matured.

Small grains.—Late threshing made good advance during the first decade in the more northern and northwestern States under generally favorable weather and was well along or completed in most districts. Preparations for wheat seeding were delayed by hard, dry soil in much of the Wheat Belt. Flax was being threshed in the northern Great Plains and other small grains were doing well.

During the second decade rains interfered with threshing in central-northern districts, while in Minnesota spring wheat deteriorated, with damage from sprouting in shock. Harvest and threshing made good advance in the West and far Northwest. Fall plowing and seeding became rather general, but rain was needed in many sections; early seeded small grains did well.

Fall plowing and seeding made mostly slow progress during the last decade, due to the generally dry conditions; in the central and northern Great Plains much of the wheat crop had been sown and some was reported coming up to good stands. It was too dry in many portions of the Ohio Valley, but farther east seeding made good advance. Gathering of other small grains progressed well.

Corn.—Much corn was safe from frost in the first decade, with the crop ripening rapidly in the Ohio Valley and about normal maturing indicated in Iowa. Dry soil caused some deterioration in Nebraska, but in the southern Great Plains rapid ripening was reported, with the bulk of the crop safe in Kansas. Elsewhere corn progressed well, except for damage by continued wet weather in the Southeast. During the second decade rapid ripening was reported in the main Corn Belt with much cut for

silage and fodder. Only local frost damage occurred and much of the crop was out of frost danger. In the Ohio Valley rapid advance toward maturity was made, and progress and condition were fair to very good in Iowa, while in Missouri normal ripening occurred. The crop was well advanced in the Great Plains and in most other portions it made good advance.

Cotton.—It was again too wet for cotton in the Atlantic Coast States during the first decade and, especially in Georgia, there were reports of bolls rotting, seed sprouting, and plants shedding to an unusual extent. In central sections progress of the crop was mostly fair to very good, while in Oklahoma advance was fair. In Texas progress continued mainly poor, with the rains too late to be of benefit; the general condition of the crop was spotted and considerable shedding was noted.

During the second decade there was some improvement in North Carolina, but the crop was at a standstill in parts of South Carolina. In Georgia cotton was opening rapidly, but many rotting bolls were evident and shedding continued. In central sections progress varied widely; advance was very good in Arkansas and the crop was largely made in Louisiana. In Oklahoma fairly good progress was reported and the crop was opening nicely, but in Texas condition varied, ranging from poor to very good, depending on the moisture supply; progress in this State averaged fair and picking and ginning made very good advance.

During the last decade high winds, heavy rains, and flooded lowlands did much damage to cotton in the eastern portions of the belt, but toward the close of the month better weather occurred and considerable recovery was reported. In the central States of the belt the weather favored opening and conditions were generally favorable for picking and ginning. In Oklahoma opening was favored and harvest advanced rapidly, while in Texas there was little change in the situation, although picking and ginning progressed well.

Miscellaneous crops.—Pastures needed rain in the Ohio Valley, but elsewhere in the East they were generally satisfactory; there was a rather widespread need of moisture in western parts. Except for some local blight, potatoes did well and truck made mostly satisfactory progress. Sugar cane was developing satisfactorily and sugar beets were ready to dig at the close of the month. Citrus did well, except for some storm damage in Florida, and deciduous fruits developed satisfactorily.